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July 15, 1996

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW.
Washington, D.C. 20554

Re: *Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5Ghz Frequency Range*, ET Docket No. 96-102

Dear Mr. Caton:

Pursuant to the Notice of Proposed Rulemaking in the above captioned matter, enclosed please find an original and nine (9) copies of the Comments of the Information Technology Industry Council. Please date stamp the additional copy and return it with our messenger.

If you have any questions regarding this filing, please do not hesitate to call.

Sincerely,

Colleen Boothby

Colleen L. Boothby

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List A B C D E

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 Ghz Frequency Range	ET Docket 96-102 RM-8648 RM-8653

COMMENTS OF THE
INFORMATION TECHNOLOGY INDUSTRY COUNCIL

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Before the
FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	
Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Frequency Range	ET Docket No. 96-102 RM-8648 RM-8653

COMMENTS OF THE
INFORMATION TECHNOLOGY INDUSTRY COUNCIL

The Information Technology Industry Council ("ITI") hereby submits its Comments on the Notice of Proposed Rulemaking ("NPRM")[1] in the above-referenced proceeding.

ITI is an association representing the information technology industry, including manufacturers, integrators and service providers. For more than two decades, ITI (and its predecessor, the Computer and Business Equipment Manufacturers Association) has played a leading role in the development of rules governing the design, development and marketing of computing devices.[2]

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1 *Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Frequency Range*, ET Docket No. 96-102, Notice of Proposed Rulemaking, FCC 96-193 (Released May 6, 1996) ("NPRM").

2 The positions expressed herein represent the current views of ITI's members. Individual member companies may file comments regarding the NPRM expressing their views on particular subjects.

INTRODUCTION

As detailed in the discussion below, ITI strongly supports the Commission's proposed allocation of 350 MHz in the 5 GHz band for use by a new generation of wireless multimedia-capable computer device and information appliances. Such devices and peripherals enable wireless transmission of digital data and multimedia among computers and other information appliances, both within Local Area Networks and between point-to-point sites. By permitting wireless interaction with the Internet and other components of the National Information Infrastructure ("NII"), these devices will introduce affordable, user-provided high-speed, low-power wireless capabilities which will enhance equitable access to the NII, including access for core public institutions (such as schools, libraries and community agencies), residence-based users (such as students or persons with physical mobility limitations), and commercial services. Unlicensed spectrum can enable the delivery of flexible, affordable services by fostering an environment that will encourage innovation and the development of products and applications that may change the way people communicate, work, and learn.

ITI endorses the Commission's proposal to make spectrum available for this wireless communications technology on an unlicensed basis, but also encourages the Commission to consider affording these devices somewhat more protection from interference than that applicable to existing Part 15 equipment.

ITI agrees with the Commission that minimal regulation of this emerging and promising industry will foster competition and encourage innovation. Likewise, ITI supports the proposition that interested users of the allocated spectrum should collaborate to establish protocols and etiquette to administer the sharing of the airwaves.

By establishing an environment in which manufacturers are encouraged to experiment and cooperate, the Commission will help U.S. manufacturers to become leaders in the development of these services and devices. In addition, those institutions that stand to gain the most from wireless networking devices will be spared the expense associated with licensed or wireline services.

DISCUSSION

I. ALLOCATING 350 MHz IN THE 5 GHz BAND TO HIGH-SPEED, WIRELESS, DATA NETWORKS IS IN THE PUBLIC INTEREST.

ITI strongly supports the Commission's proposed allocation of 350 MHz of spectrum, at 5 GHz, for unlicensed, wireless, data communications.[3] As the Commission recognizes, dramatic advances in digital technology and the data-processing capabilities of computers have made possible the transmission of multi-media data across local and wide area networks and amongst computer users at large.[4]

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[3] *See* NPRM at ¶¶ 1, 34.

[4] *See* NPRM at ¶ 31.

The Commission appropriately acknowledges the need for sufficient spectrum to enable wireless interconnection among computer networks and devices.[5] Allocating 350 MHz of spectrum in the 5 GHz band, as the Commission proposes, is appropriate to meet this need because spectrum currently allocated for data transmission is not sufficiently wide to accommodate the current and future generations of broadband, multimedia transmissions. In addition, as the Commission observes, spectrum below 5 GHz is too congested and higher frequencies would increase the cost of currently available equipment[6] -- thus eliminating most of the economic advantages of using wireless technology for broadband data transmission.

ITI agrees with the Commission that allocating 350 MHz of spectrum in the 5 GHz band, for unlicensed use by broadband wireless data networks, will "benefit a vast number of users, including educational, medical, business and industrial users."[7] The proposed allocation will encourage the development of new "NII/SUPERNet" devices that facilitate the free flow of high-speed, multimedia information within and between homes, schools, libraries, health care facilities and businesses -- without the time and expense of hard-wiring the necessary network connections. In addition, the allocated spectrum will support both nomadic information access in buildings and on campuses, and

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5 *See* NPRM at ¶ 32.

6 *See* NPRM at ¶ 34.

7 *See* NPRM at ¶ 33.

low-power, low-cost, point-to-point connections between sites and institutions within communities. Interconnection across distances of up to 10 km, via low power wireless transmission, is a critical linkage to the NII for many prospective users, particularly in the education community.

II. USE OF THE ALLOCATED SPECTRUM SHOULD BE ON AN UNLICENSED BASIS WITH HEIGHTENED PROTECTION FOR NII/SUPERNet DEVICES.

ITI supports the Commission's proposal to permit the operation of NII/SUPERNet devices in the 5 GHz band on an unlicensed basis.[8] There are advantages and disadvantages to unlicensed operation. In the context of broadband transmission capacity that will be used for a variety of applications, however, the unlicensed model can be more appropriate.

Unlicensed operation provides free and open access to the spectrum for all Americans -- an individual user need only install an NII/SUPERNet device and turn it on to begin transmitting data for any number of purposes. If the spectrum were licensed, its use could be restricted or subjected to fees or centralized administration that could reduce innovation or increase the cost and effort to use wireless data transmission. Consequently, unlicensed operations solve a variety of communications needs that may not be met if free and open access to spectrum were not available. Unlicensed operations also

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[8] *See* NPRM at ¶ 1.

improve local area network flexibility and wireless access to broadband wireline networks.

The Commission appropriately recognizes that an unlicensed regulatory structure will promote effective use of the 5 GHz spectrum and permit a greater variety of new applications.[9] Given the nature of these applications,[10] *vis-à-vis* other unlicensed devices, the Commission should also consider affording NII/SUPERNet devices heightened protection from interference not currently available under Part 15.

To this end, ITI recommends serious consideration of a new "Part 16" category, as suggested by Apple's Petition[11] in this proceeding, that would offer users a more defined interference environment than Part 15. The NII/SUPERNet technology has the potential to make unprecedented levels of data and information available inexpensively to a variety of commercial and public interest users and, accordingly, should receive heightened protection.

III. THE COMMISSION SHOULD ESTABLISH ONLY MINIMAL REGULATIONS FOR NII/SUPERNet DEVICES.

ITI agrees with the Commission that minimal regulation will provide the opportunity for the greatest variety of unlicensed NII/SUPERNet devices, and will enable the maximum flexibility in the types of services that may be

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9 *See* NPRM at ¶ 55.

10 As the Commission recognizes, NII/SUPERNet devices may be used to, among other things, connect America's schools to the Internet, provide real-time, multimedia access to pertinent medical data for use by a group of doctors at different locations, and permit the wireless interconnection of local area networks. *See* NPRM at ¶ 13.

11 Apple Petition at 5-6.

provided.[12] The fewer restrictions established *a priori*, the more freedom industry will have to develop innovative products, technologies and applications for high-speed, multimedia, wireless networks.

In an environment with few regulations, manufacturers of computers, peripherals, televisions and video equipment, wireless hand-held devices and networks, and software, as well as system integrators and local and wide area network providers will be unleashed to develop innovative products and technologies to meet the growing needs of the market and the public institutions of the United States. However, each application and solution created to provide or take advantage of broadband wireless networks may require a different bandwidth, data rate, power, channel use time or type of antenna to provide reliable, cost-effective communications.

Consequently, ITI urges the Commission to allow the interim standards set forth in the NPRM,[13] such as "listen-before-talk," power levels, etc., to develop (or not, as the case may be) through industry dialogue, experimentation, and consensus or user practice or etiquette, not regulatory mandate. Industry participants should have maximum flexibility to develop appropriate rules of the road. The industry groups involved in the process must, of course, represent a broad cross-section of the affected industries and employ a process to ensure that all interests are fairly represented.[14] But so long as an

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12 *See* NPRM at ¶ 46

13 *See* NPRM ¶¶ 46-54.

adequate opportunity for participation is afforded to all interested parties, participants will have a strong incentive to diminish the probability of interference.

ITI suggests, therefore, that the Commission need only establish regulations to prevent interference between NII/SUPERNet devices and users of adjacent spectrum. Within the 5 GHz bands the Commission proposes for wireless, broadband, data networks in this proceeding, industry-developed standards and etiquette should govern.

IV. THE COMMISSION'S PROPOSED ALLOCATION OF SPECTRUM FOR WIRELESS DATA NETWORKS, TOGETHER WITH LIMITED REGULATION, ENCOURAGES INDUSTRY COMPETITIVENESS, BOTH DOMESTICALLY AND GLOBALLY.

ITI agrees with the Commission that allocating 350 MHz of spectrum in the 5 GHz range for broadband, wireless, multimedia networks will stimulate economic development and the growth of American industries, both domestically and abroad.[15] The computer, telecommunications and consumer electronics industries provide significant contributions to America's economy -- in revenues, jobs and high-tech worker training. Allocating sufficient spectrum for use by new devices and applications to be developed by these industries, and creating an environment which encourages innovation, will lead to the development and manufacture of new products, and the offering of new services; in other words, the creation of new jobs and an expansion of the U.S. economy.

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[14] Comments of ITI, RM-8648 and RM-8653, (filed July 10, 1996) at 6.

[15] *See* NPRM at ¶ 2

In addition, because the spectrum proposed by the Commission overlaps that used in other jurisdictions, such as the HIPERLAN band that is being developed in Europe, the proposed allocation will enable manufacturers to leverage development efforts across a broader market, thereby enhancing the competitiveness of American companies in the world electronics and telecommunications markets.

CONCLUSION

For the foregoing reasons, ITI supports the Commission's proposed allocation of 350 MHz of spectrum in the 5 GHz band for broadband, wireless, data networks and urges the Commission to establish only minimal regulations to prevent interference with users of adjacent spectrum.

Respectfully submitted,

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July 15, 1996

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Certificate of Service

I, Jonathan Reiter, hereby certify that true and correct copies of the preceding Comments of the Information Technology Industry Council In the Matter of Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNet Operations in the 5 GHz Frequency Range, ET Docket No. 96-102 were served this 15th day of July 1996 via first class mail, overnight delivery or hand delivery upon the following:

ITS
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Room 246
Washington D.C., 20554

Jonathan Reiter

July 15, 1996